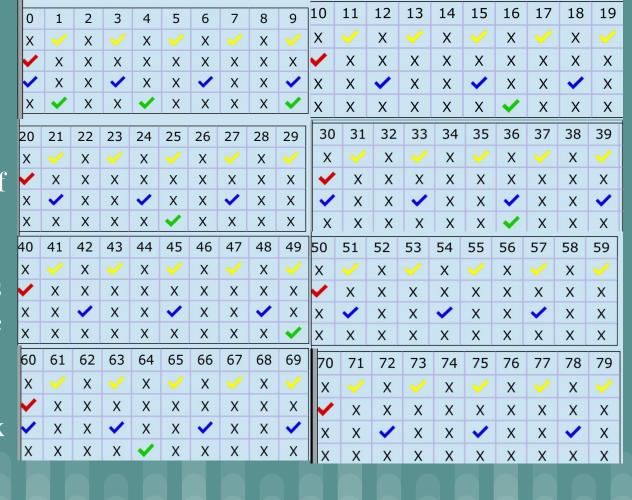
NRICHIVE PROBLEMS Light the Lights again

by Yuto, Joshua, Daichi & Tom

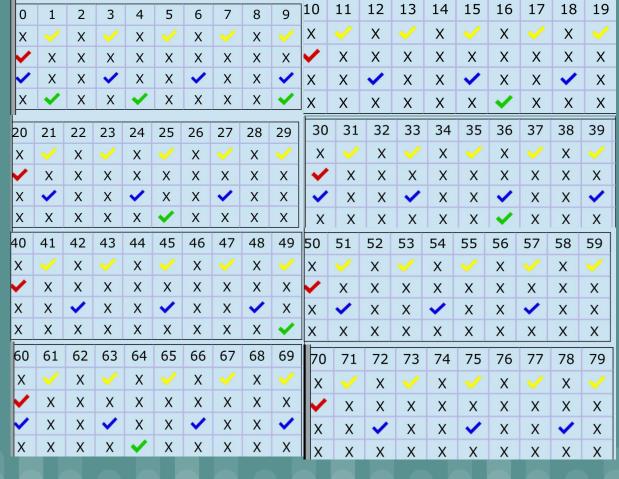
Part 1 of Light the Lights again



We first took photos of all of the numbers, and figured out the patterns. A yellow check means the number is odd. A red check means the number is multiple of 10. A blue check is a number divisible by 3. A green check means the number is a square number.



It is not possible to make all of the lights light up. An odd number cannot be a multiple of 10, as a multiple of 10 is always even, so the yellow and red lights can't light up together.



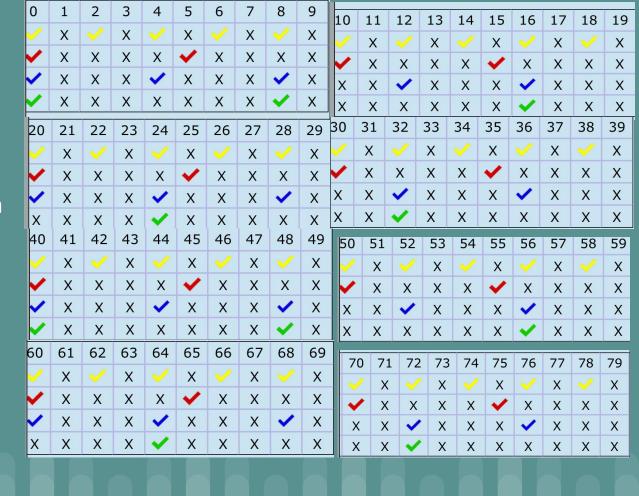
Part 2 of Light the Lights again



We first took photos of all of the numbers, and figured out the patterns. A yellow check means the number is even. A red check means the number is multiple of 5. A blue check is a number divisible by 4. A green check means the number is a multiple of 8.



It is possible to make all of the lights light up. On 0, all the lights turn on, as 0 is an even number and is a multiple of 5, 4, and 8.



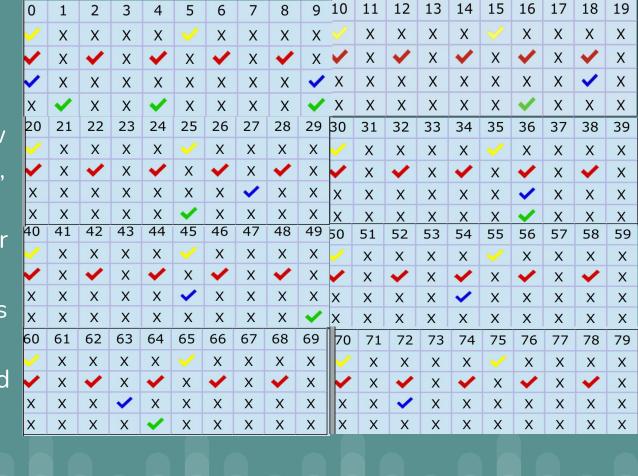
Part 3 of Light the Lights again



We first took photos of all of the numbers, and figured out the patterns. A yellow check means the number is a multiple of 5. A red check means the number is an even number. A blue check is a number divisible by 9. A green check means the number is a square number.

X X X X Χ X X X X X X X 28 29 30 31 32 33 X X X X X X Χ X Χ X X X X X X 49 48 X X Χ 68 69 61 64 65 66 67 X X

If there was no limit to how much the number could go, there would be a number that all 4 lights light up. For instance, 900 would make all the lights light up as it is a square number, an even number, a multiple of 5, and a multiple of 9



Part 4 of Light the Lights again



We first took photos of all of the numbers, and figured out the patterns. A yellow check means the number is a even number. A red check means the number is a square number. A blue check means the number is an odd number. A green check means the number is a multiple of 7.



All four lights can't light up at once because there is no number that is both an odd number and an even number at the same time.

